

**WASP PARASITES OF THE BURDOCK SEED MOTH,  
*METZNERIA LAPPELLA* ZELLER (GELECHIIDAE):  
NEW HOST RECORD FOR *BRACON MELLITOR* SAY  
(HYMENOPTERA: BRACONIDAE)**

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*Abstract.* — *Bracon mellitor* parasitizes the burdock seed moth, *Metzneria lappella*. This is a new host record for this wasp, best known as a parasite of the boll weevil, *Anthonomus grandis*. *Agathis malvacearum*, another wasp parasite of this moth, is newly reported from the Pacific coast of Washington, a westward range extension of 2000 km. We also report a transcontinental North American distribution for the host-parasite association of *M. lappella* with *Hyssopus thymus*, the paramount Nearctic wasp parasite of the European pine shoot moth, *Rhyacionia buoliana*.

*Key Words:* Braconidae, burdock, distribution, Gelechiidae

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The burdock seed moth, *Metzneria lappella* Zeller (Lepidoptera: Gelechiidae) eats the seeds of burdock (the Palearctic genus, *Arctium* L. (Compositae)) by excavating in the indehiscent flower head, or bur. Naturalized in North America, this univoltine moth is found wherever common burdock, *A. minus* (Hill) Bernhardt, is established (Purrington 1970). Field collections of burdock burs made in the United States have yielded several wasp species that parasitize *M. lappella* larvae (Juhala 1967, Purrington 1970, 1979, Purrington and Uleman 1972). In this paper, we report a new primary wasp parasite of this moth and record new distributions for two other parasites.

We obtained about 100 burs in Mattapoisett, MA (12-II-86), which yielded 250 *M. lappella* larvae and 7 overwintering prepupal larvae of *Bracon mellitor* Say (Hymenoptera: Braconidae). This was the first record of *B. mellitor* as a parasite of *M. lappella*. Wasp larvae were enclosed in pa-

pery silken cocoons inside host excavations within the burs. *Bracon mellitor* is a solitary univoltine ectoparasite of several larval weevils and moths in the Nearctic region (Adams et al. 1969, Cross and Chesnut 1971, Krombein et al. 1979, Cuda and Burke 1983). It is an important parasite of the boll weevil, *Anthonomus grandis* Boheman (Coleoptera: Curculionidae) (Adams et al. 1969, Sturm and Sterling 1986, Pencoc and Phillips 1987).

*Agathis malvacearum* Latreille (= *A. metzneriae* Muesebeck) (Hymenoptera: Braconidae) is an Old World solitary univoltine endoparasitic wasp introduced into the Western Hemisphere, probably with burdock containing *M. lappella*. In the Palearctic, *A. malvacearum* is also found on the moths, *M. carlinella* Stainton (Gelechiidae), *Evetria resinella* L. (Gelechiidae), and *Coleophora otitae* Zeller (Coleophoridae) (Shenefelt 1970). North American distribution records are Quebec, New England,

Long Island, and west to North Dakota (Juhala 1967, Krombein et al. 1979). We found *A. malvacearum* on *M. lappella* in burdock collected at Portland, OR (Reed College, 25-XII-85, col. C. B. Purrington), Bellfountain, OR (10-I-86), and Seattle, WA (Pike Place, 6-I-86). The new records extend the wasp's known range by 2000 km westward to the Pacific coast.

Evidently burdock has been present in western Washington since at least the 1930's (Gunther 1973). It arrived in the New World with European settlers in the same way that it has become ubiquitous: its burs are armed with hooked spiny bracts that engage fur and cloth. Although Fyles (1899) speculates that *M. lappella* arrived in Quebec from Europe only late in the 19th century, burdock infested with *M. lappella* and its braconid parasite, *A. malvacearum*, likely became established in North America soon after the first settlements were made along the Atlantic coast. Gross et al. (1980) review the introduction and early distribution of burdock in North America.

We recovered *Hyssopus thymus* Girault (Hymenoptera: Eulophidae), a multivoltine, gregarious, larval ectoparasite from *M. lappella* in burrs obtained at Mattapoissett, MA (12-II-86), Wooster, OH (10-IV-86), and Kent, WA (2-I-86). These new collection records establish a coast-to-coast North American distribution for the *M. lappella*-*H. thymus* host-parasite association, a relationship first reported from North Dakota (Purrington 1970). According to Syme (1974), *H. thymus* is the most common, widespread, and effective Nearctic parasite of the European pine shoot moth, *Rhyacionia buoliana* (Schiffermüller) (Tortricidae).

We anticipate that wherever burdock becomes established it will have arrived with some members of a small integrated insect community. We predict this community will include the Old World co-immigrants, *M.*

*lappella* and *A. malvacearum*, as well as eclectic elements from native fauna.

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